



# BMSC12015 Cell and Tissue Biology

## Term 2 - 2023

Profile information current as at 29/04/2024 01:14 pm

All details in this unit profile for BMSC12015 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this unit, you will advance your knowledge of the structure of cells and how they integrate into specific tissues or organs within our body systems. You will learn how cells utilise key signalling and molecular processes to proliferate and differentiate into tissues with physiological and functional properties. You will also learn how cells communicate with neighbouring cells and the extracellular environment, and the importance of this in maintaining homeostasis. You will gain knowledge in cellular pathophysiology and understand key cellular processes that are disrupted during the development of particular diseases. Finally you will have the opportunity to apply the knowledge gained in a practical environment during laboratory practical sessions.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Pre-requisite BMSC12012 Molecular Cell Biology

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 2 - 2023

- Bundaberg
- Mixed Mode
- Rockhampton

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:

Click here to see your [Residential School Timetable](#).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

#### 1. **Case Study**

Weighting: 20%

#### 2. **Laboratory/Practical**

Weighting: Pass/Fail

#### 3. **Practical Assessment**

Weighting: 30%

#### 4. **Examination**

Weighting: 50%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [University's Grades and Results Policy](#) for more details of interim results and final grades.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Unit Learning Outcomes

**On successful completion of this unit, you will be able to:**

1. Evaluate the cellular and molecular processes that lead to coordinated and regulated activity in tissues of the body
2. Describe how specific cell structures achieve their respective cellular functions
3. Explain how changes at the cellular level can influence host tissue physiology
4. Explain the basic role of the fundamental signalling pathways as effectors in maintaining homeostasis
5. Demonstrate sound scientific reasoning and application in experimental design and research.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Case Study - 20%	•	•	•	•	
2 - Laboratory/Practical - 0%					•
3 - Practical Assessment - 30%	•				•
4 - Examination - 50%	•	•	•	•	

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	
2 - Problem Solving					•
3 - Critical Thinking	•	•	•	•	•
4 - Information Literacy					
5 - Team Work					
6 - Information Technology Competence					•
7 - Cross Cultural Competence					
8 - Ethical practice					
9 - Social Innovation					
10 - Aboriginal and Torres Strait Islander Cultures					

## Textbooks and Resources

### Textbooks

BMSC12015

#### Prescribed

#### **Molecular Pathology: The Molecular Basis of Human Disease**

Edition: 2nd (2017)

Authors: Coleman, W. & Tsongalis, G.

ISBN: 9780128027615

Binding: Hardcover

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Zoom

## Referencing Style

**All submissions for this unit must use the referencing styles below:**

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Maddie Higgins** Unit Coordinator

[m.j.higgins@cqu.edu.au](mailto:m.j.higgins@cqu.edu.au)

## Schedule

### Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Revision of molecular pathology: apoptosis and inflammation	1 - 5	

### Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Epigenetics and the molecular diagnosis of human disease in the clinical laboratory	6 - 13, 30, 31, and 32	

### Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of epithelium		

### Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
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Cellular function of the cardiovascular & pulmonary system including molecular basis of disease	14 and 18
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#### Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of blood including molecular basis of disease	15, 16, and 17	

#### Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
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#### Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of the liver and kidneys including molecular basis of disease	20 and 24	

#### Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of the exocrine and endocrine system including molecular basis of disease	19, 23, 25 and 26	<b>Written Assessment</b> Due: Week 7 Friday (1 Sept 2023) 5:00 pm AEST

#### Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of the musculoskeletal system including molecular basis of disease	28	

#### Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of reproductive organs including molecular basis of disease	19, 23, 25 and 26	Rockhampton Residential School (refer to unit Moodle page for dates and times).

#### Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of the nervous system including molecular basis of disease	29	Bundaberg Residential School (refer to unit Moodle page for dates and times).

#### Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Cellular function of skin including molecular basis of disease	27	<b>Laboratory Workbook</b> Due: Week 11 Friday (29 Sept 2023) 5:00 pm AEST

#### Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
Revision week		

#### Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
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## Term Specific Information

Your Unit Coordinator for BMSC12015 Cell and Tissue Biology is Maddie Higgins. You can contact me using the forum on the unit Moodle page, alternatively by email (m.j.higgins@cqu.edu.au), or phone on (07) 4150 7017. The forum for this unit is regularly monitored and you can expect a response within 24 hours of posting your question.

Each week you will be expected to complete:

- 2-hour lecture (face to face or online)
- 1-hour tutorial (face to face or online)
- 3 - 5 hours of self-directed study
- 3 - 5 hours of assessment preparation

Online sessions will be facilitated via Zoom with links provided on the unit Moodle page. Recordings of lectures and tutorials will be made available on the unit Moodle page.

This unit includes a Compulsory Residential School (refer to Assessment 2), and your attendance is required to pass the unit. You will also be assessed on the completion of your Laboratory Workbook (refer to Assessment 3).

## Assessment Tasks

### 1 Written Assessment

#### Assessment Type

Case Study

#### Task Description

You will be presented with a clinical case study. This assessment will require a detailed discussion of the cellular and molecular processes outlined in the assessment task on the unit Moodle page. You will need to discuss how these cellular and molecular processes are disrupted in the specific condition(s) and critically evaluate the scientific literature to validate your argument.

#### Assessment Due Date

Week 7 Friday (1 Sept 2023) 5:00 pm AEST

#### Return Date to Students

Week 9 Friday (15 Sept 2023)

#### Weighting

20%

#### Minimum mark or grade

50%

#### Assessment Criteria

- Title
- Introduction (background and direction of the selected case study)
- Explanation of the normal cellular and molecular processes that lead to coordinated and regulated activity of cells and tissues within the body system
- Critical evaluation of the scientific literature to discuss how the condition(s) impact normal regulatory processes and influence host tissue physiology
- Explain the role of signalling pathways in maintaining homeostasis
- Conclusion summarising the key points of the discussion relevant to the case study
- Reference list of resources must be included as well as in-text citations
- Professional presentation, adherence to formatting, academic style requirements and word count

#### Referencing Style

- [Harvard \(author-date\)](#)

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

Online

### Learning Outcomes Assessed

- Evaluate the cellular and molecular processes that lead to coordinated and regulated activity in tissues of the body
- Describe how specific cell structures achieve their respective cellular functions
- Explain how changes at the cellular level can influence host tissue physiology
- Explain the basic role of the fundamental signalling pathways as effectors in maintaining homeostasis

## 2 Laboratory/Practical

### Assessment Type

Laboratory/Practical

### Task Description

During the Residential School, you will be assessed on your ability to work safely and professionally in a laboratory environment through observation and your ability to complete written and/or verbal tasks to demonstrate sound scientific reasoning and application in experimental design and research.

### Assessment Due Date

### Return Date to Students

### Weighting

Pass/Fail

### Assessment Criteria

The Residential School is compulsory, and your attendance is required to pass the unit. You will also be assessed on the completion of your Laboratory Workbook (refer to Assessment 3).

### Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

No submission method provided.

### Learning Outcomes Assessed

- Demonstrate sound scientific reasoning and application in experimental design and research.

## 3 Laboratory Workbook

### Assessment Type

Practical Assessment

### Task Description

During the Residential School you will be required to perform experimental protocols. You will be expected to complete a Laboratory Workbook and perform experimental calculations, report experimental results, and answer questions provided. Your Laboratory Workbook must be clearly labelled with your name and student number. On completion, your Laboratory Workbook can be scanned, or completed digitally, and must be uploaded onto the unit Moodle page by the due date.

### Assessment Due Date

Week 11 Friday (29 Sept 2023) 5:00 pm AEST

### Return Date to Students

Review/Exam Week Friday (13 Oct 2023)

### Weighting

30%

### Minimum mark or grade

50%

### Assessment Criteria

You will be assessed on the following:

- Soundness of experimental design



- Correct experimental outcomes
- Ability to correctly perform calculations
- Ability to correctly interpret experimental results
- Ability to explain outcomes based on cellular and molecular changes / processes

**Referencing Style**

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Evaluate the cellular and molecular processes that lead to coordinated and regulated activity in tissues of the body
- Demonstrate sound scientific reasoning and application in experimental design and research.

## Examination

**Outline**

Complete an invigilated examination.

**Date**

During the examination period at a CQUniversity examination centre.

**Weighting**

50%

**Length**

180 minutes

**Exam Conditions**

Closed Book.

**Materials**

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Calculator - non-programmable, no text retrieval, silent only

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [Academic Learning Centre \(ALC\)](#) can support you in becoming confident in completing assessments with integrity and of high standard.

### What can you do to act with integrity?



#### Be Honest

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### Produce Original Work

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem